

What is claimed is:

1. An apparatus, characterized in that it is a disk rotating apparatus that comprises an axis of rotation that holds a disk so that it can be inserted and removed as needed and which rotates said disk around said disk axis, and in that it has an air-bearing means, which has a smooth surface facing the surface of said disk and wherein the gap between said smooth surface and the surface of said disk is 300 microns or smaller, with said air-bearing means being constructed so that it can be moved away from said disk held by said axis of rotation.

2. An apparatus, characterized in that it is an apparatus that comprises an axis of rotation that holds a disk so that it can be inserted or removed as needed, which has a disk rotating means that rotates said disk around said disk axis and a positioning means that positions the head with respect to said disk, and which performs information recording and/or information reproduction by operation of said disk by said head, and in that it has an air-bearing means, which has a smooth surface facing the surface of said disk and wherein the space between said smooth surface and the surface of said disk is 300 microns or smaller, with said air-bearing means being constructed so that it can be separated from said disk held by said axis of rotation.

3. An apparatus, characterized in that it is a disk rotating apparatus

that comprises an axis of rotation that holds a disk so that it can be inserted and removed as needed and which rotates said disk around said disk axis, and in that it has an air-bearing means, which has a smooth surface facing the surface of said disk and wherein the space between said smooth surface and the surface of
5 said disk is 300 microns or smaller, and a disk support means, which is a means that supports said disk with which said disk is moved back and forth in the direction of said axis of rotation while the surface of said disk is being supported.

4. An apparatus, characterized in that it is an apparatus that
10 comprises an axis of rotation that holds a disk so that it can be inserted and removed as needed, which has a disk rotating means that rotates said disk around said disk axis and a positioning means that positions the head with respect to said disk, and which performs information recording and/or information reproduction by operation of said disk by said head, and in that it has an air-bearing means, which has a smooth surface facing the surface of said disk and wherein the space between said smooth surface and the surface of said disk is
15 300 microns or smaller, and a disk support means, which is a means that supports said disk with which said disk is moved back and forth in the direction of said axis of rotation while the surface of said disk is being supported.

20

5. An apparatus, characterized in that it is a disk rotating apparatus that comprises an axis of rotation that holds a disk so that it can be inserted and removed as needed, and which rotates said disk around said disk axis, and in

that it has an air-bearing means, which has a smooth surface facing the surface of said disk and wherein the space between said smooth surface and the surface of said disk is 300 microns or smaller, and a disk support means, which is a means that supports said disk with which said disk is moved back and forth in the 5 direction of said axis of rotation while the surface and end face of said disk are being supported.

6. An apparatus, characterized in that it is an apparatus that comprises an axis of rotation that holds a disk so that it can be inserted and removed as 10 needed, which has a disk rotating means that rotates said disk around said disk axis and a positioning means that positions the head with respect to said disk, and which performs information recording and/or information reproduction by operation of said disk by said head, and in that it has an air-bearing means, which has a smooth surface facing the surface of said disk and wherein the 15 space between said smooth surface and the surface of said disk is 300 microns or smaller, and a disk support means with which said disk is moved back and forth in the direction of said axis of rotation while supporting the surface and end face of said disk.

20 7. An apparatus, characterized in that it is a disk rotating apparatus that comprises an axis of rotation that holds a disk so that it can be inserted and removed as needed and which rotates said disk around said disk axis, and in that it has an air-bearing means, which has a smooth surface facing the surface of

said disk and wherein the gap between said smooth surface and the surface of said disk is 300 microns or smaller, with said air-bearing means comprising a space for accessing the end part of said disk, such as an indentation, a cut-out part, or a through-hole, etc.

5

8. An apparatus, characterized in that it is an apparatus that comprises an axis of rotation that holds a disk so that it can be inserted and removed as needed, which has a disk rotating means that rotates said disk around said disk axis and a positioning means that positions the head with respect to said disk, and which performs information recording and/or information reproduction by operation of said disk by said head, and in that it has an air-bearing means, which has a smooth surface facing the surface of said disk and wherein the space between said smooth surface and the surface of said disk is 300 microns or smaller, with said air-bearing means having a space for accessing the end part of said disk, such as an indentation, cut-out part, through-hole, etc., at the surface facing said disk.

9. An apparatus, characterized in that it is a disk rotating apparatus that comprises an axis of rotation and which rotates said disk around said disk axis, and in that it has an air-bearing means, which has a smooth surface facing the surface of said disk and wherein the gap between said smooth surface and the surface of said disk is 300 microns or smaller, and a disk holding means that can be attached to and removed from said disk rotating apparatus as needed,

with said disk holding means being constructed so that it can be attached to and removed from said disk rotating apparatus as needed while still holding said disk.

10. An apparatus, characterized in that it is an apparatus that comprises
5 an axis of rotation that holds a disk so that it can be inserted and removed as needed, which has a disk rotating means that rotates said disk around said disk axis and a positioning means that positions the head with respect to said disk, and which performs information recording and/or information reproduction by operation of said disk by said head, and in that it has an air-bearing means,
10 which has a smooth surface facing the surface of said disk and wherein the space between said smooth surface and the surface of said disk is 300 microns or smaller, and a disk holding means that can be attached to and removed from said disk rotating apparatus as needed, with said disk holding means being constructed so that it can be attached to and removed from said disk rotating
15 apparatus as needed while still holding said disk.

11. An apparatus, characterized in that it is a disk operating apparatus that comprises an axis of rotation that holds a disk so that it can be inserted and removed as needed, which has a disk rotating means that rotates said disk around said disk axis and a positioning means that positions the head with respect to said disk, and which performs information recording and/or information reproduction by operation of said disk by said head, and in that it has an air-bearing means, which has a smooth surface facing the surface of said disk and

wherein the space between said smooth surface and the surface of said disk is 300 microns or smaller, with said disk rotating apparatus being constructed so that it can be attached to and removed from said disk operating apparatus while still holding said disk.

5

12. The apparatus in any of claims 1 through 11, further characterized in that it has a movable ramp-type load mechanism for loading/unloading of heads.

13. An apparatus, characterized in that it is an apparatus that comprises
10 an axis of rotation that holds a disk so that it can be inserted and removed as needed, which has a disk rotating means that rotates said disk around said disk axis and a positioning means that positions the head with respect to said disk, and which performs information recording and/or information reproduction by operation of said disk by said head, and in that it has at least one air-bearing
15 means, which has a smooth surface facing the surface of said disk and wherein the space between said smooth surface and the surface of said disk is 300 microns or smaller, and further, a movable ramp-type load mechanism for loading/unloading of heads.

20 14. The apparatus according to any of claims 1 through 13, further characterized in that said axis of rotation has a part that engages with said disk, with said engaging part having an engagement tolerance such that said disk slides along said axis of rotation while maintaining an almost horizontal posture

with respect to said air-bearing means.

15. The apparatus in any of claims 1 through 14, further characterized
in that said air-bearing means has a part that faces all or part of the surface of
5 said disk and a part continuous with this [part] that protrudes from said disk.

16. The apparatus in any of claims 1 through 15, further characterized
in that the smooth surface of said air-bearing means is ring-shaped or is a shape
that envelopes a ring with a round hole on the inside.

10

17. The apparatus in any of claims 1 through 16, further characterized
in that it also has a means that temporarily anchors the axis of rotation.